

# BAYS OF CAROLINA

*Loblolly bay, sweet bay and red bay ... these three inspired the name for our Carolina bays. Though similar at a glance, each is unique with relatives ranging from the avocado to commercial tea.*

by Doug Rayner

illustration by Ellen Fishburne Seats

Most descriptions of typical bay tree habitats stress their inhospitable conditions ... impenetrable thickets densely interwoven with stout-armed greenbrier. Some have even suggested that were the thorny greenbrier to be removed, entire thickets would collapse.

Self-made naturalist John Lawson, upon his arrival in South Carolina in 1700, examined bay trees in spite of the thickets. He was moved to write, "all over this Swamp [there grows] a tall, lofty Bay-tree, not the same as in England, these being in their Verdure all the winter long."

Lawson probably was referring to the loblolly bay, variously known as tan bay, swamp laurel or black laurel. The English bay species Lawson contrasted it to was "the bay of commerce," the source of popular bay leaves for cooking. "Commercial" bay, *Laurus nobilis*, was referred to in biblical times as a symbol of wealth and wickedness. During the ancient Olympic games wreaths of it crowned the winners.

Our native bay tree species do not symbolize human failings, nor do they crown Olympic winners, but for a long, long time, they have quietly been the crowning glories of South Carolina's bay swamps and evergreen shrub bogs, lending greenery to drab wintertime lowlands.

Early "naturalist-explorers" such as Lawson, Mark Catesby and John and William Bartram left descriptions of Carolina's bay swamps, so-named because of the connection of bay trees and the wet, swampy soils supporting them. Although most bay swamps occur in flat depressions of the outer coastal plain, they also are referred to as "pocosins," from the Algonquin Indian word meaning "swamp on a hill."

Three bay-swamp species grow in South Carolina. Loblolly, red and sweet bay often share the same habitat, and all three species feature leaves that superficially resemble those of England's bay of commerce. These beautiful trees have somehow managed to escape the attention of man for a long time, perhaps because of their inhospitable environs. Our knowledge of these trees is beginning to grow, however, and with that knowledge should come a greater appreciation of the evergreens of the bays.

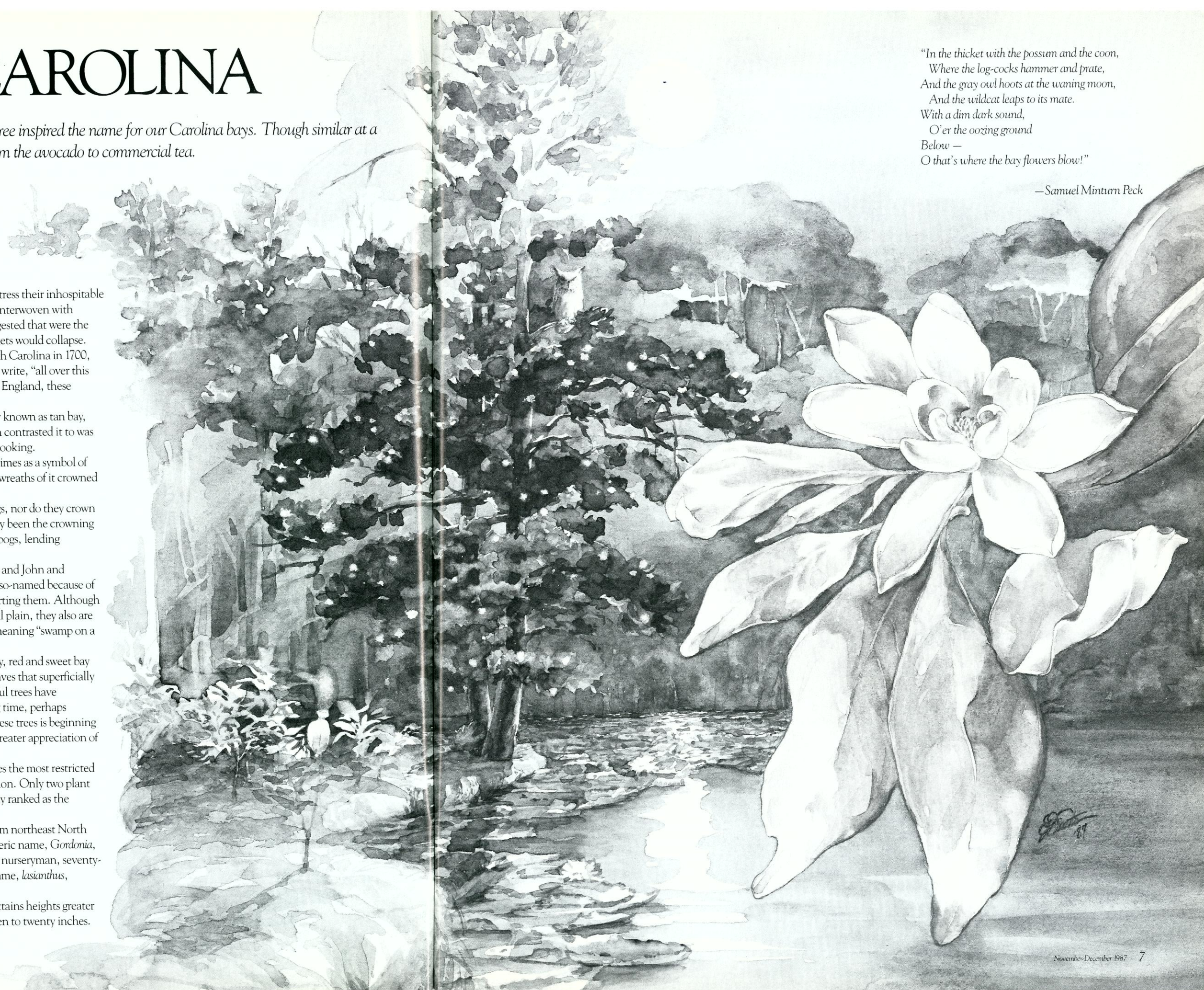
Of South Carolina's three bay species, loblolly bay possesses the most restricted habitat requirements, and hence, the most limited distribution. Only two plant habitats support it: bays and pocosins. Until recently, loblolly ranked as the least-known of the three typical bay trees.

Loblolly bay grows on the outer and inner coastal plain from northeast North Carolina to central Florida and southern Mississippi. Its generic name, *Gordonia*, was bestowed upon it in honor of James Gordon, an English nurseryman, seventy-one years after Lawson reported its occurrence. Its species name, *lasianthus*, translates as hairy-flowered.

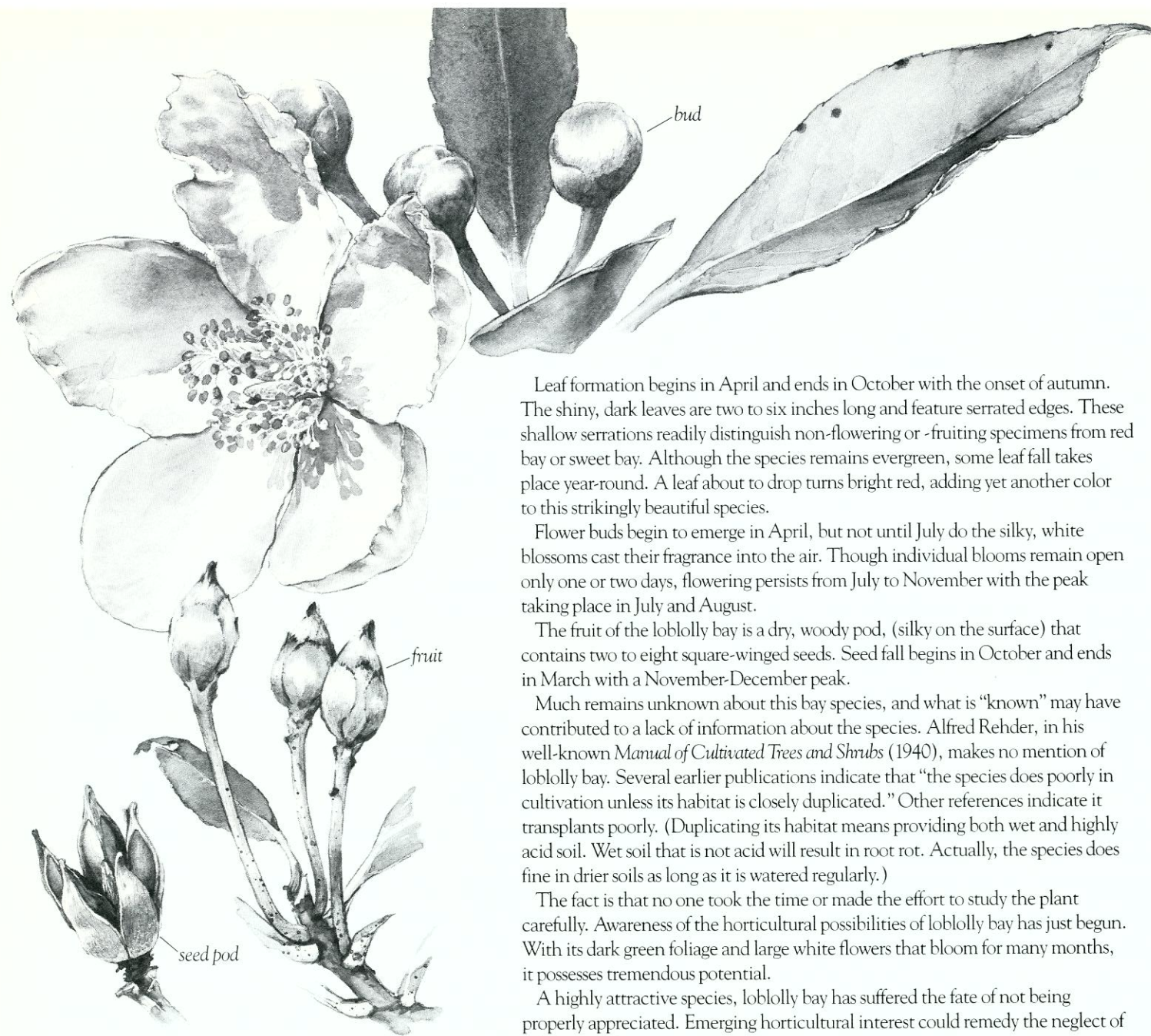
Loblolly bay grows into a medium-sized tree that seldom attains heights greater than seventy-five feet nor stem diameters larger than eighteen to twenty inches.

"In the thicket with the possum and the coon,  
Where the log-cocks hammer and prate,  
And the gray owl hoots at the waning moon,  
And the wildcat leaps to its mate.  
With a dim dark sound,  
O'er the oozing ground  
Below —  
O that's where the bay flowers blow!"

—Samuel Minturn Peck







Loblolly Bay, *Gordonia lasianthus*

Description: Has dark green, leathery, serrated leaves, 2 to 6 inches long, 1.5 to 2 inches wide, which turn scarlet before falling. Long-stemmed, fragrant white flowers, 2 to 2.5 inches in diameter. Reddish-brown bark broken into scaly ridges. Seed pod is a hairy, ovoid, woody capsule containing two to eight square-winged seeds. Grows to 75 feet tall, 20 inches in diameter.

Habitat: Coastal plain from northeast North Carolina to central Florida and southern Mississippi, in pocosins and Carolina bays.

This short-lived species belongs to the family of mostly evergreen trees that includes the commercial tea plant. Primarily an Asiatic family, it has several small members in the southeastern United States.

Leaf formation begins in April and ends in October with the onset of autumn. The shiny, dark leaves are two to six inches long and feature serrated edges. These shallow serrations readily distinguish non-flowering or -fruiting specimens from red bay or sweet bay. Although the species remains evergreen, some leaf fall takes place year-round. A leaf about to drop turns bright red, adding yet another color to this strikingly beautiful species.

Flower buds begin to emerge in April, but not until July do the silky, white blossoms cast their fragrance into the air. Though individual blooms remain open only one or two days, flowering persists from July to November with the peak taking place in July and August.

The fruit of the loblolly bay is a dry, woody pod, (silky on the surface) that contains two to eight square-winged seeds. Seed fall begins in October and ends in March with a November-December peak.

Much remains unknown about this bay species, and what is "known" may have contributed to a lack of information about the species. Alfred Rehder, in his well-known *Manual of Cultivated Trees and Shrubs* (1940), makes no mention of loblolly bay. Several earlier publications indicate that "the species does poorly in cultivation unless its habitat is closely duplicated." Other references indicate it transplants poorly. (Duplicating its habitat means providing both wet and highly acid soil. Wet soil that is not acid will result in root rot. Actually, the species does fine in drier soils as long as it is watered regularly.)

The fact is that no one took the time or made the effort to study the plant carefully. Awareness of the horticultural possibilities of loblolly bay has just begun. With its dark green foliage and large white flowers that bloom for many months, it possesses tremendous potential.

A highly attractive species, loblolly bay has suffered the fate of not being properly appreciated. Emerging horticultural interest could remedy the neglect of this beautiful evergreen.

Loblolly bay has no known history as a plant with medicinal value, and the value of its sporadically prolific seed production for wildlife is unknown. Evidently, no butterfly larvae utilize its leaves, and no specific flower pollinators for the species are known.

Recent studies report the potential food value of its fire and stump sprouts to deer and hogs. Occasionally, its bark has been used in tanning, hence its common name of tan bark in parts of Florida. The wood is sometimes used in cabinet work, but weakness prevents widescale use in general carpentry.

The genus of another bay, *Magnolia virginiana*, was named by Carolus Linnaeus in honor of Pierre Magnol, professor of botany in Montpellier, France. Magnol's namesake, sweet bay, is a classic tree of the South where it also is known by various common names including swamp bay, small magnolia, sweet bay magnolia, white bay, laurel magnolia, evergreen magnolia and beaver tree, a reference to the beaver's fondness for its bark.

Sweet bay occurs in three varieties along the coastal plain from Massachusetts to Florida and over to Texas: *M. australis*, *M. pumila* and *M. virginiana*.

Variety *australis*, still not recognized by many botanists but readily accepted by most horticulturists, is an evergreen tree that attains a height of ninety feet or more and a diameter exceeding three feet. It grows only south of southern North Carolina.

The variety *pumila* is a low shrub found in southern South Carolina and Florida that is fire-adapted and roots from branches on the ground.

Variety *virginiana* is a tall shrub with multiple stems arising from a single base. It seldom exceeds thirty feet. Deciduous in the North, it's tardily deciduous in the South where new spring leaves push off the old leaves.

The leaves and flowers of all three varieties are very similar, though their sizes vary. The elliptical leaves, roughly five inches long, possess a white lower surface. Flowering in South Carolina occurs mostly in June but can take place as early as April and as late as July. Fragrant blossoms are borne singly at the ends of the branches. Despite being two to three inches across, the flowers are the smallest of the American magnolias.

A configuration of nine to twelve petals in rows of three yields the cup-like appearance of sweet bay's flowers. Numerous stamens present a purple base. The fruit, a compact cone of overlapping follicles, ripens from July to October. When each follicle opens, it releases a scarlet seed which hangs upon a slender thread.

*Magnolia* may well be the most primitive genus in the Southeast, with fossil records indicating it once enjoyed a wider distribution in the northern hemisphere. Its distribution today correlates with a narrow suite of rainfall and temperature conditions—fifty inches or more of rain annually and greater than fifty degrees Fahrenheit within respective winter and summer isotherms of thirty-two degrees and sixty-four degrees Fahrenheit.

Like loblolly and red bay, sweet bay is a characteristic species of bays and pocosins. Sandy alluvial swamps dominated by swamp tupelo also host it. Generally, the species prefers poorly drained, often-flooded sites and occasionally grows in the alkaline soils of ravines and hammocks.

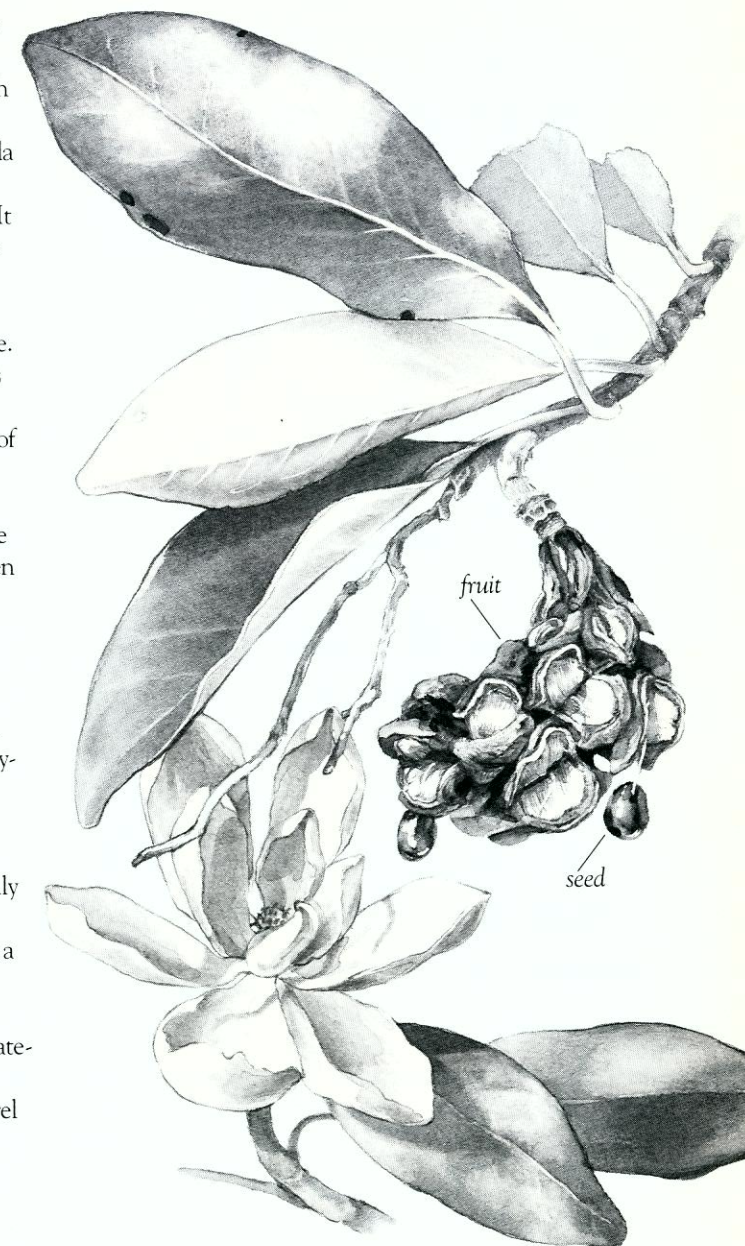
Shiny, green leaves with stark white undersides and large white flowers create a high horticultural potential for the sweet bay. When floodlights play upon the leaves' white undersides, they reflect like mirrors and create quite a show when tossed and turned by the wind. The beauty of the species is showcased at the Statehouse grounds in Columbia where lights are directed on the trees at night.

Squirrels relish sweet bay seeds, a fact demonstrated by the ever-present squirrel population at the Statehouse grounds. In the wild, small mammals, songbirds and game birds such as turkey and quail dine on sweet bay seeds. Deer browse upon the twigs and leaves, and cattle reportedly are very fond of them as well. Sweet bay leaves provide food for butterfly larvae such as those of the tiger, spicebush and black swallowtails.

Richly aromatic red bay, *Persea borbonia*, is a small evergreen also known as persea, swamp bay, Florida mahogany, tisswood, laurel tree and, incorrectly, sweet bay. This species occurs in two varieties: the typical variety is found in the coastal plain and piedmont from North Carolina to Florida and Texas. The variety *pubescens* occurs on the coastal plain from Delaware to Florida, Texas and the Bahamas. Because chemical studies just recently verified the distinctiveness of the two varieties, most natural history literature doesn't distinguish between them.

Red bay seldom grows higher than thirty or forty feet; its diameter seldom exceeds one foot. Leaves are three to six inches long and may be densely hairy or nearly smooth. Often the leaves feature marginal galls, an overgrowing and uncurling that results in a characteristic, asymmetrical shape induced by an insect known as the laurel psyllid. The gall-infected leaves aid in identifying the species.

Red bay flowers look like tiny bells and grow in clusters on a common stalk. The flowers, which consist of three sepals, three petals and twelve stamens, are unusual



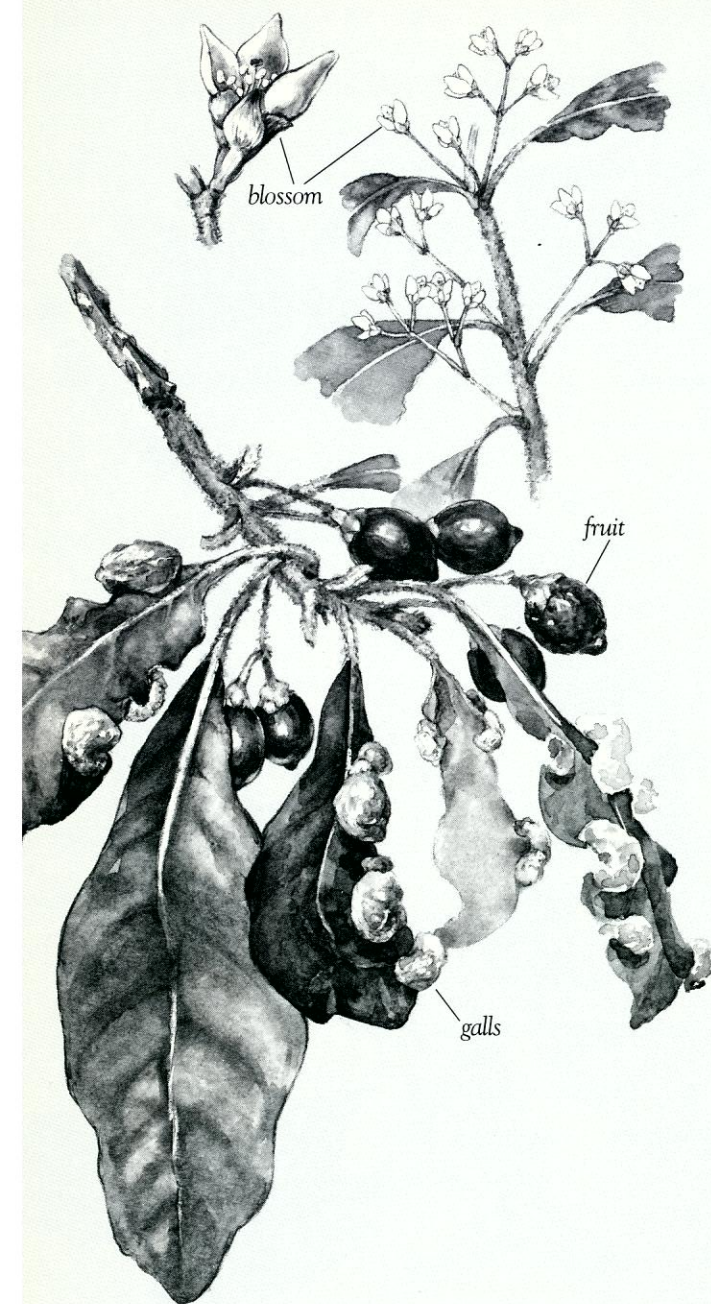
Sweet Bay, *Magnolia virginiana*

Description: Has shiny, green leaves with a whitish lower surface, 4 to 6 inches long and 1 to 3 inches wide. Blunt-pointed apex on leaf. Fragrant, creamy-white, cup-shaped flowers, 2 to 3 inches in diameter. Bark is light brown and scaly. Dark red fruit, not hairy, with overlapping follicles containing bright red seeds. Varieties grow from 3 to 90 feet tall, 2 inches to 3 feet in diameter.

Habitat: Along coastal plain from Massachusetts to Florida and across the Southeast to Texas. Generally prefers poorly drained, often-flooded sites, bays, pocosins and savannas.

This species is a member of a family of about one hundred species of trees and shrubs that grow in the warmer parts of North America and eastern Asia.





Red Bay, *Persea borbonia*

**Description:** Aromatic, evergreen leaves, 3 to 6 inches long and 1 to 1.5 inches wide, often with marginal galls. Creamy-white, bell-shaped flowers lacking petals but with hairy sepals; occur in loose axillary clusters. Blue to violet-black ovoid fruit on reddish stalks. Grows to 50 feet tall.

**Habitat:** Moist soils near streams or swamps. Found in coastal plain and piedmont from Delaware to Florida and Texas, also in the Bahamas.

*Like the avocado, this species belongs to the laurel family which includes over a thousand primarily tropical members.*

in that they have four peculiar window-like openings in the pollen-producing part of each stamen. Many insects visit red bay trees. Bees, wasps, flies and ants seek the open flowers to glean nectar from the orange-colored glands at the base of the third series of stamens.

The fruit consists of dark blue-black berries borne on reddish stalks. Flowering occurs in South Carolina from March to June, and the fruit matures in September and October.

Unlike loblolly bay and sweet bay, red bay grows in many habitats other than pocosins and bays. Maritime forests, barrier islands, pine savannas, tidal marshes and most swamp systems provide it a home. It is scattered in thickets along streams and occasionally is found as an understory species on a wide variety of upland habitats. In scientific parlance, the species exhibits very wide ecological amplitude. In shade or full sun, red bay does well. Fire-adapted, it comes back strongly from root sprouts following burning.

Red bay belongs to the laurel family. Surprisingly, the avocado is a very close relative, and, like the avocado, the red bay has evolved an unusual flowering system which assures cross-pollination. Two "types" of trees exist. While one sheds pollen, the other is pollen-receptive. Effective sexual reproduction for the species is not possible unless the pistils of one tree are receptive to pollen and the stamens of another tree are shedding pollen, a fact not lost on commercial growers of avocados.

Although horticultural interest in red bay is not especially strong, the species has been in the horticultural trade since 1739. With dark, evergreen leaves, it is attractive throughout the year but especially so in the fall when its blue-black fruit adorns red stalks. Songbirds and turkeys enjoy the fruit, and it sometimes constitutes an important fall-winter food for quail.

Red bay never grows very large, so it has never been of great commercial value. The heavy, strong, orange wood is streaked with brown and has been used in furniture, interior finishing and boat building.

Dried red bay leaves were used by American Indians as a seasoning, and they still are used in Louisiana as a flavoring for gumbo and meat dishes.

The strong, camphor-like odor of the leaves and twigs hints at a possible medicinal use, though no reports of such use exist. A 1912 study by the United States Department of Agriculture reported the presence in leaf and twig extracts of three valuable "therapeutic" agents, including camphor, that could be significant to the "medicinal practitioner or perfumer." As far as is known, no efforts have been made to obtain commercial quantities of camphor or other volatile oils from red bay.

*Bay trees* are interesting and important species worthy of more attention. Unfortunately, the habitats named after them, bays and bay swamps, are fast disappearing. Carolina bays, for instance, were once the most abundant bay-tree habitats in South Carolina. More than 2,700 of these elliptical depressions two acres or greater in size have been identified on the state's coastal plain.

Since 1984 wildlife biologists within the Heritage Trust program have sought the least disturbed and most significant bays and bay complexes. Of the original number identified, only about five hundred warranted field surveys. With somewhere between eighty and ninety percent of the field work completed, only thirty bays and bay complexes remained sufficiently undisturbed to warrant protection through the Heritage Trust program.

The vast majority of Carolina bays have been at least partially destroyed.

Although many bays and pocosins consist of near-impenetrable thickets, they are nonetheless unique habitats worthy of protection. Not the least of our concern is the fact that they are habitats for the fascinating bay trees of the Carolinas. 🐾

*Doug Rayner is a botanist and Inventory Coordinator for the Nongame and Heritage Trust Section of the state wildlife department.*

## EVENTS

**NOTE:** Because of printing deadlines, dates are subject to change. Before traveling to an event, please call first for specific information. All area codes: 803.

### NOVEMBER 2, 9, 16, 23, 30.

**Holiday Nature Craft Series.** Nature makes the finest decorations. Join in this craft series and get a step ahead of the holiday season. Learn how to make sweetgum Christmas trees, oak-leaf wreaths, shell angels and muscadine wreaths. Please pre-register. Place: Myrtle Beach State Park, Myrtle Beach. For more information, contact the park, 238-5325.

### NOVEMBER 7-8.

**West Carolina Camellia Society Show.** Amateur and professional growers exhibit prize-winning blooms. Entry deadline is November 7, 11 a.m. Place: Inn on the Square, Uptown Greenwood. For more information, contact Linda Foxworth, 134 Colonial Drive, Greenwood, SC 29646, 223-1939.

### NOVEMBER 8.

**Quilting Bee.** Local quilters will demonstrate their skills and display their finished works from 1-5 p.m. in this impressive Greek Revival house, Redcliffe; special tours. Place: Redcliffe Plantation State Park, Aiken. For more information, contact the park, 827-1473.

### NOVEMBER 8-14.

**National Fox Hunt Field Trial and Bench Show.** Nearly 1,000 hounds and 400 fox hunters from all over the United States are expected to attend this week-long event. Place: Camden. For more

information, contact William S. Tetterton, P.O. Box 530, Camden, SC 29020, 432-6063.

### NOVEMBER 14.

**Holiday Crafts Workshop.** Participants choose from a variety of sessions to create holiday gifts and decorations. Place: Charles Towne Landing, Charleston. For more information, contact the park, 556-4450.

### NOVEMBER 20-22.

**Holiday Creations.** Personalize your Christmas with handmade gifts and decorations. Classes held: decorating, entertaining and ornament making. Please pre-register. Place: Hickory Knob State Resort Park, McCormick. For more information, contact the park, 443-2151.

### DECEMBER 4-5.

**Third Annual Christmas Craft Show.** Sponsored by the Orangeburg Parks and Recreation Department, this event features exhibits on wood work, needlecrafts and others; homemade breads and cookies; door prizes, entertainment and Santa Claus. Place: Orangeburg City Gym, Orangeburg. For more information, contact Orangeburg Recreation Department, P.O. Box 1321, Orangeburg, SC 29115-1321, 534-6211.

### DECEMBER 4-6.

**Christmas Time in Olde Pendleton.** Candlelight tour on Friday night featuring two homes, two churches and one restored inn; other tours on Saturday and Sunday. Place: Pendleton. For more information, contact Anolyn Watkins, P.O. Box 152,

Pendleton, SC 29670, 646-3782 or 646-8087.

### DECEMBER 13.

**Candlelight Tour of Homes.** Sponsored by the Camden Junior Welfare League, these candlelight tours of homes will begin at the Camden Archives. Place: Camden. For more information, contact Sharon Wright, 1814 Kennedy Drive, Camden, SC 29020.

### DECEMBER 21, 23, 29-31.

**Children's Days.** Children in grades 1-6 receive a treat during the holiday season as well as giving their parents a much-needed break. Activities include arts and crafts, recreation and nature activities. Place: Charles Towne Landing, Charleston. For more information, contact the park, 556-4450.

### JANUARY 8-9.

**Grand American Coon Hunt.** Some of the finest coon dogs from across the United States and Canada compete for trophies and prizes. Place: Orangeburg. For more information, contact Charles Taylor, Orangeburg Chamber of Commerce, P.O. Box 328, Orangeburg, SC 29116-0328, 534-6821.

### JANUARY 31.

**Oyster Festival.** Charleston's recipe for a fun-filled family extravaganza, the festival offers music, exhibits, contests and lots of oysters. Place: Charleston. For more information, contact Joe Sliker, Charleston Restaurant Association's chairman, Charleston, SC 29401, 723-7591.

### FEBRUARY 1-29.

**Black Heritage Celebration.** Art exhibits, concerts, lectures

and cultural art performances pay tribute to the Afro-American culture. Place: North Charleston. For more information, contact Marty Besancon, Bethune Art Center, 5841 Rivers Avenue, North Charleston, SC 29418, 554-6735.

### FEBRUARY 12-14.

**Southeastern Wildlife Exposition.** Wildlife art show, crafts, sculptures, carvings, auctions, sporting goods displays, duck-calling contest, state waterfowl stamp contest and other events housed in several downtown historic buildings. Place: Charleston. For more information, contact Kay Newman, 237 King Street, Charleston, SC 29401, 723-1748 or 577-7327.

### FEBRUARY 27-28.

**Showcase of Woodcarvings.**

The largest exhibition of woodcarvings and woodcarvers that will appear in the piedmont area of the Carolinas offers a judged competition, carving demonstrations, wide selection of carving tools and supplies. Entry fee for carvers; deadline for entering is February 12, 1988. Place: Charlotte, North Carolina. For more information, contact Charlotte Parks and Recreation Department, Showcase of Woodcarvings, 1418 Armory Drive, Charlotte, NC 28204, (704) 336-2584.

*To list an event, please send information three to four months in advance of the magazine's publication date to Tricia Way, South Carolina Wildlife, P.O. Box 167, Columbia, SC 29202-0167, 734-3972. 🐾*

